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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,824	01/11/2002	Joseph Rustad	16010-05885	7891
758	7590	02/08/2006	EXAMINER	
FENWICK & WEST LLP SILICON VALLEY CENTER 801 CALIFORNIA STREET MOUNTAIN VIEW, CA 94041			JEAN GILLES, JUDE	
			ART UNIT	PAPER NUMBER
			2143	
DATE MAILED: 02/08/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/043,824	Applicant(s) RUSTAD, JOSEPH	
	Examiner Jude J. Jean-Gilles	Art Unit 2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 33-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>07/18/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Action is in regards to the Reply received on 01/20/2006.

Response to Amendment

1. This action is responsive to the RCE application filed on 01/20/2006. Claims 1-32 have been cancelled. No claim is amended. Claims 33-40 are newly added. Claims 33-40 are now pending. Claims 33-40 represent a method and apparatus for "Fast transaction response time prediction across multiple delay sources."

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 33-40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Qin et al (Qin), Patent No. 6,393,480 B1 in view of Engel et al (Engel) U.S. Patent No. 6,519,636 B2.

Regarding **claim 33**, Qin discloses a method of predicting the performance of an application in a multi-hop network, the multi-hop network comprising a client and a server, the method comprising:
determining, for each thread of the application, a set of application factors
corresponding to a set of functions performed by the application, the

application factors being independent of the network and of a network flow control protocol, the application factors comprising average packet size (column 5, lines 40-50);

determining a set of network delay times corresponding to a series of network delay sources along the multi-hop network path, the network delay sources comprising a queuing delay, a bandwidth delay, a bottleneck delay, and one of a transmission delay, a constant delay, and a node delay (column 5, lines 3-66; column 8, lines 1-67; column 9, lines 25-67; column 10, lines 1-65);

determining a set of network flow factors corresponding to the network flow control protocol, the network flow factors comprising a number of turns added per direction, the direction relative to the client and the server (column 5, lines 40-67; column 8, lines 8-62; fig. 8, item 806);

determining a duration of each thread of the application based on the application factors, the network delay times and the network flow factors (column 5, lines 1-9); and

determining a total response time based on the durations of the threads (column 5, lines 1-9).

However, the Office agrees with the applicants that Qin does not teach the details of determining, for each thread of the application, a set pf application factors corresponding to a set of functions performed by the application, including average node send time.

In the same field of endeavor, Engel discloses a set of application factors Bandwidth includes but is not limited to any one or more of the following parameters: peak rate and average rate at which packets are sent from the network server to the client, maximum burst sizes at which packets can be sent at the peak rate, and the maximum length of the packets [see Engel; column 6, lines 47-53].

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Engel's teachings of using the method of determining the average time at which packets are sent with the teachings of Qin, for the purpose of improving the ability of a network "*...to provide a method and a system for classifying, manipulating, and/or controlling communications, e.g., packets transmitted over a network*" as stated by Engel in lines 42-45 of column 5. Qin also provides additional reason to combine by stating that his invention is thus able to estimate performance of an application in a particular network environment....predict response time and relationships among threads [see Qin, column 2, lines 3-12]. By this rationale, **claim 33** is rejected.

Regarding **claim 34**, The combination Qin-Engel discloses the method of claim 33, wherein said determining a set of network flow factors comprises generating a histogram of node send time, and determining the number of turns added per direction based on the histogram (fig. 3, item 306; column 8, lines 8-62).

Regarding **claim 35**, The combination Qin-Engel discloses an apparatus for predicting the performance of an application in a multi-hop network, the multi-hop network comprising a client and a server, the apparatus comprising:

means for determining, for each thread of the application, a set of application factors corresponding to a set of functions performed by the application, the application factors being independent of the network and of a network flow control protocol, the application factors comprising average packet size (column 8, lines 46-54) and average node send time (column 4, lines 29-41);

means for determining a set of network delay times corresponding to a series of network delay sources along the multi-hop network path, the network delay sources comprising a queuing delay, a bandwidth delay, a bottleneck delay, and one of a transmission delay, a constant delay, and a node delay(column 5, lines 3-66; column 8, lines 1-67; column 9, lines 25-67; column 10, lines 1-65);

means for determining a set of network flow factors corresponding to the network flow control protocol, the network flow factors comprising a number of turns added per direction, the direction relative to the client and the server (column 5, lines 40-67; column 8, lines 8-62; fig. 8, item 806);

means for determining a duration of each thread of the application based on the application factors, the network delay times and the network flow factors(column 5, lines 1-9); and

means for determining a total response time based on the durations of the thread (column 5, lines 1-9).

Regarding **claim 36**, The combination Qin-Engel discloses the apparatus of claim 35, wherein said means for determining a set of network flow factors comprises means for generating a histogram of node send time, and means for determining the number of turns added per direction based on the histogram (fig. 3, item 306; column 8, lines 8-62).

Regarding **claim 37**, The combination Qin-Engel discloses a computer readable medium comprising computer readable instructions which, when executed by a processing system, cause the processing system to perform a method of predicting the performance of an application in a multi-hop network, the multi-hop network comprising a client and a server, the method comprising:

determining, for each thread of the application, a set of application factors corresponding to a set of functions performed by the application, the application factors being independent of the network and of a network flow control protocol, the application factors comprising average packet size (column 8, lines 46-54) and average node send time [see Engel; column 6, lines 47-53];
determining a set of network delay times corresponding to a series of network delay sources along the multi-hop network path, the network delay sources comprising a queuing delay, a bandwidth delay, a bottleneck delay, and one of a transmission delay, a constant delay, and a node delay (column 5, lines 3-66; column 8, lines 1-67; column 9, lines 25-67; column 10, lines 1-65);
determining a set of network flow factors corresponding to the network flow control protocol, the network flow factors comprising a number of turns added per

direction, the direction relative to the client and the server (column 5, lines 40-67; column 8, lines 8-62; fig. 8, item 806);
determining a duration of each thread of the application based on the application factors, the network delay times and the network flow factors (column 5, lines 1-9); and
determining a total response time based on the durations of the threads (column 5, lines 1-9).

Regarding **claim 38**, The combination Qin-Engel discloses the medium of claim 37, further comprising computer readable instructions which, when executed by the processing system, cause the processing system to generate a histogram of node send time [see Engel; column 6, lines 47-53] and to determine the number of turns added per direction based on the histogram (fig. 3, item 306; column 8, lines 8-62).

Regarding **claim 39**, The combination Qin-Engel discloses an apparatus for predicting the performance of an application in a multi-hop network, the multi-hop network comprising a client and a server, the apparatus comprising:
application factor logic for determining, for each thread of the application, a set of application factors corresponding to a set of functions performed by the application, the application factors being independent of the network and of a network flow control protocol, the application factors comprising average packet size (column 8, lines 46-54) and average node send time [see Engel; column 6, lines 47-53]; delay time logic for determining a set of network delay times corresponding to a

series of network delay sources along the multi-hop network path, the network delay sources comprising a queuing delay, a bandwidth delay, a bottleneck delay, and one of a transmission delay, a constant delay, and a node delay (column 5, lines 3-66; column 8, lines 1-67; column 9, lines 25-67; column 10, lines 1-65);

flow factor logic for determining a set of network flow factors corresponding to the network flow control protocol, the network flow factors comprising a number of turns added per direction, the direction relative to the client and the server (column 5, lines 40-67; column 8, lines 8-62; fig. 8, item 806);

first duration logic for determining a duration of each thread of the application based on the application factors, the network delay times and the network flow factors (column 5, lines 1-9); and

second duration logic for determining a total response time based on the durations of the threads (column 5, lines 1-9).

Regarding **claim 40**, The combination Qin-Engel discloses the apparatus of claim 39, wherein said flow factor logic for determining a set of network flow factors comprises logic for generating a histogram of node send time [see Engel; column 6, lines 47-53], and logic for determining the number of turns added per direction based on the histogram (fig. 3, item 306; column 8, lines 8-62).

Response to Arguments

4. Applicant's Request for Reconsideration filed on 01/20/2006 has been carefully considered but is not deemed fully persuasive. However, because there exists the likelihood of future presentation of this argument, the Examiner thinks that it is prudent to address Applicants' main points of contention.

Applicant contends that Qin fails to disclose determining, for each thread of the application, a set of application factor; corresponding to a set of functions performed by the application; the application factors being independent of the network and of a network flow control protocol, the application factors comprising A) average packet size and B) average node send time.

5. As to "Point A" it is the position of the Examiner that the Qin patent in detail teaches the limitations of an average packet or frame size as expressed in claim 33 above [see Qin; column 5, lines 40-50].

As to "Point B", new reference of Engel teaches in details this limitation of the claim [see rejection of claims 33 above; see Engel, column 6, lines 47-53].

Conclusion

6. Accordingly, **THIS ACTION IS MADE NON- FINAL**. Any inquiry concerning this communication or earlier communications from examiner should be directed to Jude Jean-Gilles whose telephone number is (571) 272-3914. The examiner can normally be reached on Monday-Thursday and every other Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley, can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-9000.


Jude Jean-Gilles

Patent Examiner

Art Unit 2143

JJG 

February 04, 2006


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